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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

Reply To
Attn Of: ECL-113

AUG 29 2001

Frazer Lockhart, Deputy Assistant Manager
U.S. Department of Energy
Rocky Flats Field Office
10808 Highway 93, Unit A
Golden, CO 80403-8200

Subject: INEEL Dispute Resolution, Operable Unit 7-10

Dear Mr. Lockhart:

It is my understanding that you have been appointed by Assistant Secretary for Environmental Management Jessie Hill Roberson, to represent the Department of Energy in resolving the Pit 9 dispute issues at the INEEL. It is my sincere hope that we will be able to identify a viable path forward. Towards this end, we have attached a list of options that we believe, cover the gamut for meeting our characterization and retrieval needs at Pit 9 and the other Subsurface Disposal Area (SDA) pits and trenches.

As you can see, the purpose is not the same for each option listed. In our opinion, there are two fundamental goals that must be achieved in order to reach consensus. First, we must obtain sufficient characterization data to identify how TRU wastes and other COCs are distributed within the pits and trenches. This information is necessary to address long-term criticality concerns; fate and transport modeling for aquifer protection; and remedial action objectives. Second, we must perform necessary treatability studies to identify cost and implementability issues with the remedial alternatives.

In our review of the list and recognition of cost and schedule concerns, it is our opinion that the following options or equivalents, are necessary components of any settlement.

Characterization Options:

- Items numbered 1 and 2: Installing additional Type A probes in selected areas to help identify potential TRU hot spots and validate disposal records;
- Item number 4: Performing a criticality analysis similar to that performed at site like WIPP. The analysis would identify credible scenarios which

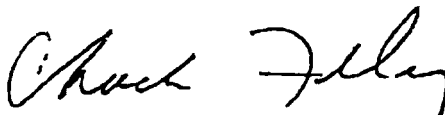
could then be compared against the actual site conditions. Additional characterization efforts would then be used to complete the gaps in our data quality objectives and identify areas or conditions where there is cause for concern.

Retrieval Options:

- Item Number 1: Performing one or more micro-retrievals within Pit 9 and other RFP pits and trenches. Driving casing is similar to driving sheetpiling providing containment. Using a small diameter casing, i.e., <3ft, minimizes the material at risk. Type A Probes would serve to identify a suitable location and verify soil moisture to allow the casing to be driven into the waste. Surface operations to affix a glovebox and retrieval manipulators (and possibly a soil vacuum system) to the standpipe could be done safely. A secondary containment, as necessary could be erected above the primary glovebox. Although the operation would be slow, in terms of material removal and packaging, it would be a vast improvement from where we are today 8 years after the signing of the Pit 9 ROD.
- Items numbered 2 and 4: These options allow for a micro-treatability study within selected pits and trenches with the safe removal of the stabilized wastes for further examination and testing.

We are hopeful on settling the OU 7-10 deadline extension and charting a responsible path forward towards addressing INEEL's TRU waste problems in the Subsurface Disposal Area. If you or your staff wish to discuss any of our proposals prior to our meeting on September 5, 2001, please contact Wayne Pierre who is available at (206) 553-7261.

Sincerely,



Charles E. Findley, Acting Regional Administrator
Region 10, Environmental Protection Agency

Enclosure:

cc: Beverly Cook, DOE-ID
Warren Bergholz, DOE-ID
Steve Allred, IDEQ
Orville Green, IDEQ
Jessie Roberson, DOE

INEEL PIT 9 DISPUTE NEGOTIATION EPA's PROPOSAL

ISSUES:

- I. DOE-ID will not meet the Pit 9 deadline dates for Stage II
- II. DOE-ID will not meet the Pit 9 deadline date for Stage III Remedial Design.
- III. DOE-ID is not meeting the Pit 9 Stage I Coring commitment in the approved Work Plan.
- IV. DOE-ID is not collecting Remedial Investigation and Baseline Risk Assessment data sufficient to support the RI/FS for the Subsurface Disposal Area (SDA).

DISCUSSION:

- **ISSUE I:** The Interim Action ROD was signed in 1993, with each Agency repeatedly committing to remove the TRU wastes from Pit 9. Stage II was scaled at 1/100 the volume of full scale. However, the cost of Stage II implementation (>\$120M) is very high given the amount of waste retrieved (~150cy). Stage II was also designed to provide characterization and retrieval implementation information to support the OU 7-13/14 RI/FS.
- **ISSUE II:** The Pit 9 ROD is for retrieval of the TRU wastes from Pit 9. Given the delays and costs associated with implementing Stage II retrieval, it may be simpler to do a full scale pit excavation assuming all the wastes and interstitial soil is TRU contaminated and no separation is necessary. However, if we can obtain reliable characterization data on where the TRU hot spots are, if any, full pit retrievals may not be necessary and would not be cost effective, especially if only a small fraction of the wastes required actual retrieval and treatment.
- **ISSUE III:** Obtaining physical samples through coring or equivalent methods provides an invaluable QA on the geophysical logging results obtained.
- **ISSUE IV:** The draft Remedial Investigation and Baseline Risk Assessment for the Subsurface Disposal Area (SDA) is the basis for establishing RAO's and determining what we need to protect. We also need to fully understand the long-term risks and costs of containment vs. the short-term risks and costs of retrieval and/or treatment.

CHARACTERIZATION OPTIONS

Item	Complexity	Cost	Action	Location	Time to Complete	Purpose
1	Minor	Minor	Install ≥ 5 Type A Probes and perform geophysical logging on each '1'	Pit 5, along the long axis of the 49 Graphite Mold drum shipment	<6mos.	<ul style="list-style-type: none"> - Confirm Shipping records disposal information - Obtain additional Pu loading information on early graphite mold shipments
2	Minor	Minor	Install additional Type A Probes and perform geophysical logging on each '1' in selected pits & trenches.	TBD	<6mos.	<ul style="list-style-type: none"> - Confirm Shipping records disposal information - Obtain additional Pu loading information on early graphite mold shipments
3	Moderate	?	Modify retrieval strategy at the post-1970 buried storage (TSA-RE) to reclaim the SDA test pit excavated drums that were placed in storage and perform SWEPP analysis	TSA-RE	?	<ul style="list-style-type: none"> - Provides a check on shipping records disposal information as past retrieval locations are known - Obtain Pu loading information on a variety of the waste forms from RFP for comparison against the post-1970 SWEPP database - Provides information on container integrity & liner packaging used in the pre-1970 wastes - Provides an opportunity for sampling and waste inspection to identify selected COC parameters
4	Moderate	Moderate	Perform an analysis of what conditions would need to be present in the RFP wastes to result in a credible risk of long-term criticality. Identify necessary DQO's	NA	<6mos	<ul style="list-style-type: none"> - Provides a point for comparison against available landfill information to identify viable criticality scenarios on which to base a DQO assessment to determine whether such conditions exist in the pits and trenches.
5	Minor	Minor	Appoint an independent multi-agency expert review team to reassess RFP historical data and current RI/FS data gathering and identify remaining DQO needs	NA	~1yr	Provides an independent check on the adequacy of the existing data, assumptions & models to support an RI/FS for the RFP pits & trenches.
6	Moderate	Moderate	Complete Stage 1 Drill String Enclosure design and fabrication and obtain 10 cores from selected areas in the RFP pits & trenches determined from Type A probe results	TBD based on Type A probe geophysical results	~2yrs	<ul style="list-style-type: none"> - Obtain pit waste material for physical examination and laboratory characterization - Provides a QA on the results of probe geophysics
7	Minor	Moderate	Perform coring of Pit 9 locations using the Hanford Rock Drill or equivalent approach in a single confinement temporary structure. Address worker safety by doing drilling during an RWMC shutdown. Obtain 10 cores from selected areas in the RFP pits & trenches determined from Type A probe results	TBD based on Type A probe geophysical results	~2yrs	<ul style="list-style-type: none"> - Obtain pit waste material for physical examination and laboratory characterization - Provides a QA on the results of probe geophysics

RETRIEVAL OPTIONS

Item	Complexity	Cost	Action	Location	Time to Complete	Purpose
1	Moderate	Minor	Drive 2-3ft diameter casing through the waste in selected pits & trenches. Fabricate & install a glovebox on top of casing with a remote manipulator & crane assembly capable of retrieving casing contents for examination and testing. Glove box enclosed within a trailer to provide secondary confinement	Pit 9 based on Type A probe geophysical results; shipping records; and surface geophysics Other selected pits & trenches	3yrs (?) Note: Assumes difficulty with getting Safety Analysis approved, as it would be a first of its kind. However, retrieval operation assures that only a small surface area exposed at any time significantly reducing material at risk	- Obtain pit waste material for physical examination and laboratory characterization - Provides a QA on the results of probe geophysics - Provides ~1 cy of waste (4 drums) retrieved per casing
2	Moderate	Moderate	Drive 2-3ft diameter refractory inner casing and an outer casing through the waste in selected pits & trenches and install electrodes in the inner casing just above the underburden to perform an in-situ vitrification of the waste. Install a hood to capture fugitive emissions. Retrieve the melt from the inner casing	Pit 9 based on Type A probe geophysical results; shipping records; and surface geophysics Other selected pits & trenches	<4yrs	- Examination of the melt evaluates the effectiveness & implementability of ISV - Obtain pit waste material for physical examination and laboratory characterization of vitrified material which will provide indirect information on initial COC loading to compare against the Type A probe results for QA
3	Minor	Moderate	Implement a mock-up of Stage II of Pit 9 at a Cold Test Pit	Cold Test Pit	>3yrs Assumes 1 yr to finalize design, 1 yr for construction & 1 yr for operations	-Provides retrieval information
4	Moderate	Minor	Drive 2-3ft diameter casing and an outer casing through the waste in selected pits & trenches to perform an in-situ grout of the waste, within a single confinement temporary structure. Retrieve the grouted waste from the inner casing	Pit 9 based on Type A probe geophysical results; shipping records; and surface geophysics Other selected pits & trenches	<4yrs	- Examination of the grouted material evaluates the effectiveness & implementability of ISG - Obtain pit waste material for physical examination and laboratory characterization of grouted material which will provide indirect information on initial COC loading to compare against the Type A probe results for QA

¹ Geophysical logging includes soil moisture, gamma-ray radiation flux; neutron radiation flux; neutron activated gamma-ray flux & gamma-ray flux direction

Note: Minor cost is considered <\$0.5M for Characterization or <\$5M for retrieval. Moderate cost is estimated at <\$5M & >\$0.5M for characterization or <\$50M & >\$5M for retrieval. Extensive cost is >\$5M for characterization or >\$50M for retrieval

Item	Complexity	Cost	Action	Location	Time to Complete	Purpose
5	Extensive	Extensive	Implement Stage II of Pit 9 per RD/RAWP	Pit 9 southwest section	>5yrs	<ul style="list-style-type: none"> - Obtain pit waste material for physical examination and laboratory characterization - Provides a QA on the results of probe geophysics - Yields ~150 cy of waste of high Pu-239 waste (600 drums) retrieved for shipment to WTPP
6	Extensive	Extensive	Implement Stage II of Pit 9 per RD/RAWP at another RFP pit	TBD - However, Pit 5 in area of the 49 graphite mold shipment would be a candidate	>5yrs	<ul style="list-style-type: none"> - Obtain pit waste material for physical examination and laboratory characterization - Provides a QA on the results of probe geophysics - Provides ~1 cy of waste (4 drums) retrieved per casing
7	Extensive	Extensive	Implement full scale retrieval of Pit 9. Assume all soil and waste below overburden is TRU wastes eliminating need to sort or segregate	Pit 9	>8yrs Assumes that ~4yrs would be required for the RD/RAWP and construction process alone	<ul style="list-style-type: none"> - Removes an estimated 30kg of Pu-239 from the SDA - Demonstrates the implementability of full pit retrieval for application to the other pits & trenches
8	Extensive	Extensive	Implement full scale retrieval of Pit 9, using a retrofitted LMAES retrieval structure. Assume all retrieved waste and interstitial soil is TRU and no segregation or sorting.	Pit 9	>4yrs Assumes that ~1yr would be required for the RD/RAWP and construction modification process	<ul style="list-style-type: none"> - Removes an estimated 30kg of Pu-239 from the SDA - Demonstrates the implementability of full pit retrieval for application to the other pits & trenches

¹ Geophysical logging includes soil moisture, gamma-ray radiation flux; neutron radiation flux; neutron activated gamma-ray flux & gamma-ray flux direction

Note: Minor cost is considered <\$0.5M for Characterization or <\$5M for retrieval. Moderate cost is estimated at <\$5M & >\$0.5M for characterization or <\$50M & >\$5M for retrieval. Extensive cost is >\$5M for characterization or >\$50M for retrieval